

Application No. 09/349,232
Reply to Office Action of January 28, 2004

REMARKS/ARGUMENTS

Favorable reconsideration of this application as amended and in light of the following discussion is respectfully requested.

Claims 1-20 are presently active in this application, Claims 1-11, 13-18 and 20 having been amended by the present Amendment.

In the outstanding Office Action Claims 2-6, 8-11, 13, 15-18 and 20 were rejected under 35 USC §112, second paragraph, as being indefinite; Claims 1-6 were rejected under 35 USC §103(a) as being unpatentable over Applicants' admitted prior art (in regard to Figure 10) in view of Miyazaki (JP 09-331420); and Claims 12 and 19 were rejected under 35 USC §103(a) as being unpatentable over Miyazaki in view of Shimoyama as applied to Claim 7 above, and further in view of Matsunaga (US 6,239,839 B1).

In response to the outstanding rejection under 35 U.S.C. 112, second paragraph, the claims have been amended to provide antecedent basis for the limitation "the wiring" by changing each usage of the terminology "the wiring" in each rejected claim to --a wiring--. In those claims in which "the wiring" was recited more than once, the same change has been made, indicating that either the same or a different wiring may be employed. In view of these changes, the outstanding rejection under 35 U.S.C. 112, second paragraph, has been overcome.

In addition, Claims 1, 7 and 14 are amended to indicate a clear intent that 35 USC 112, 6th para., not apply. No new matter has been added by the changes to the claims.

Turning now to the outstanding rejection of Claims 1-6 under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art (in regard to Figure 10) in view of

Miyazaki, it is first noted that the outstanding Office Action acknowledges that the admitted prior art does not specifically discloses at least two of the vertical signal lines in the optical black pixel regions being directly connected with each other. However, the outstanding Office Action relies on Drawing 1 of Miyazaki as disclosing a solid state image sensor device having at least two of the vertical signal lines in the optical black pixel regions directly connected with each other. After Applicants' careful review of Miyazaki, Applicants respectfully traverse this finding.

In particular, in Miyazaki, the vertical lines are connected to the common read line 7, but through corresponding switch transistors 6 provided for reading out signals from the storage capacitor CT3 onto the common read line 7, as is clear from column 3, lines 25-27, where Miyazaki state "read switch transistors 6 for reading out signals on the storage capacitor CT3 onto a common read line 7." On the other hand, referring to column 3, lines 27-29, Miyazaki state that "shift register 8 serving as a horizontal scanning circuit for enabling/disabling the switch transistors 6 in turn," whereby it is clear that according to Miyazaki, the switch transistors 6 are enabled/disabled in turn by the shift register 8 serving as a horizontal scanning circuit. From the above, it is apparently understood that the switch transistors 6 are enabled/disabled in turn to connect horizontal lines, i.e. vertical lines to the common read line 7 in turn, by the shift register 8. This means that the switch transistors 6 are not turned on at the same time. Accordingly, it is respectfully submitted that the assertion in the outstanding Office Action that "Miyazaki discloses a solid state image sensor device that at least two of the vertical signal lines in the optical black pixel regions being directly connected with each other" is inaccurate.

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In contrast to Miyazaki, in the solid state image sensor device recited in Claim 1, the vertical signal lines in the optical black pixel regions are directly connected with each other. As a result, noise does not occur when reading signals and thus vertical stripe-like noise in the read data are suppressed to be small. In Miyazaki, since the switch transistors 6 are turned on/off in turn when averaging signals, noise occurs due to the turn on/off switching, and thus considerable vertical stripe-like noises are contained in the read data. In view of this distinction in structure and the advantages thereby derived by Applicants' invention, the outstanding rejection of Claims 1-6 as unpatentable over the combination of Applicant's admitted prior art and Miyazaki et al is traversed. Withdrawal of this ground for rejection is therefore respectfully requested.

In regard to the rejection of Claims 7-11, 13-18 and 20 under 35 U.S.C. 103(a) as being unpatentable over Miyazaki in view of Shimoyama, the outstanding Office Action states the position that Shimoyama discloses a method and apparatus of correcting image read signals by removing the influence of dark current therefrom, and the method and apparatus can be configured for a linear sensing device or area-sensing device. The outstanding Office Action further states the position that Shimoyama discloses the image sensing cell area has a plurality of optical black pixel regions.

However, it is respectfully submitted that neither Miyazaki nor Shimoyama discloses the claimed feature of "at least two of the vertical signal lines in the optical black pixel regions being directly connected with each other" recited in each of Claims 7 and 14. Hence, contrary to position stated in the outstanding Office Action, it is respectfully submitted that the combination of Miyazaki and Shimoyama fails to render unpatentable Claims 7 and Claims 8-11 and 13 depending therefrom and Claim 14 and Claims 15-18 and 20 depending

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therefrom Claim 14. Withdrawal of the rejection of Claims 7-20 is therefore also respectfully requested.

Consequently, in view of the present amendment and in light of the above comments, no further issues are believed to be outstanding, and the present application is believed to be in condition for formal allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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